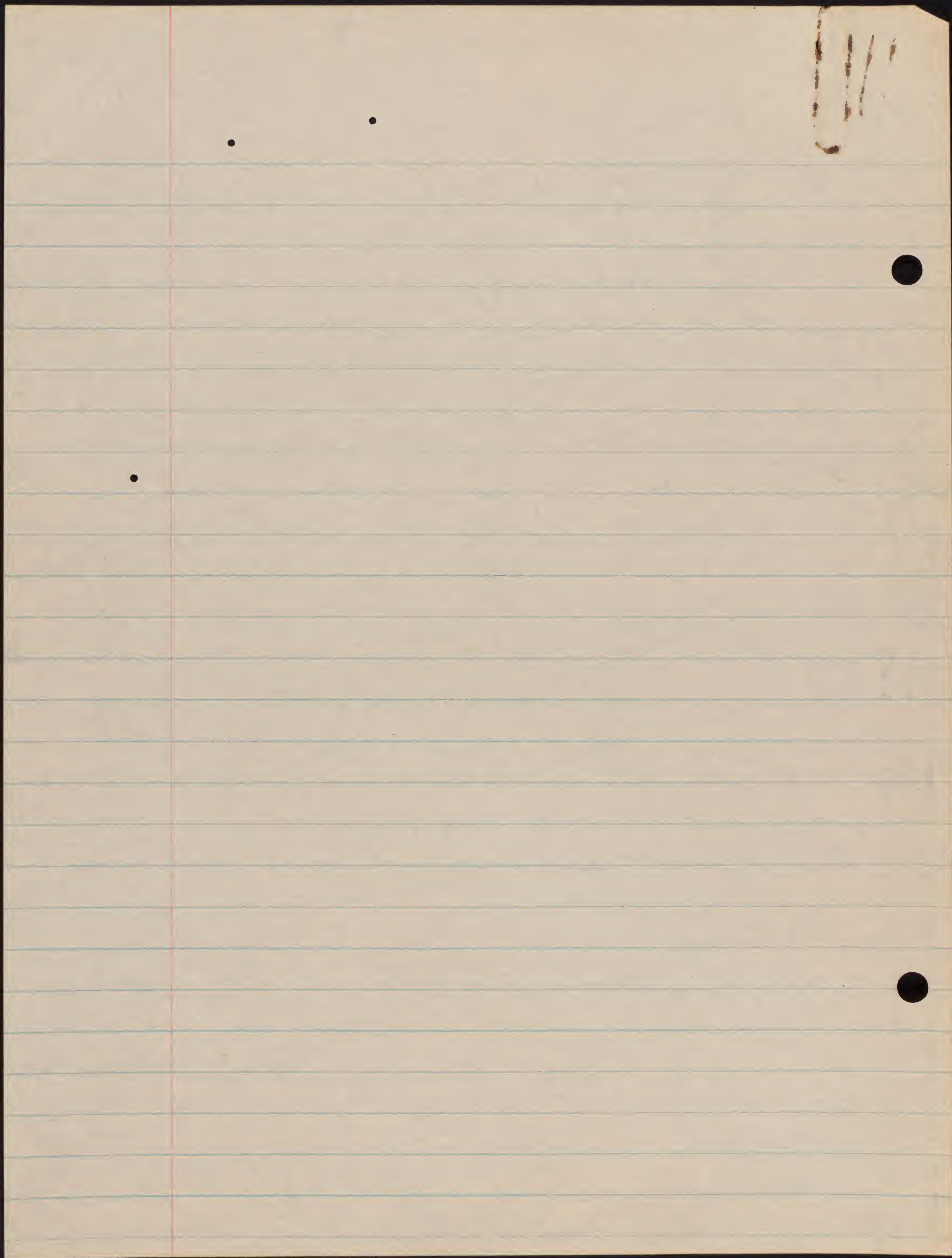


CEBUS APELLA

I



Cebus apella, I.

①

December 26, 1958

Zoo, Lima

There were a lot of these Tufted Capuchins here in a large cage with a single Woolly. Adults & sub-adults, all quite active, and all behaving in a similar way in general.

This species is really quite intermediate in appearance between the smaller tufted Capuchins and the Woolly Monkey.

Very heavy for a Capuchin, with a broad heavy head.

Uses its fingers like the smaller Capuchin species, but I saw one of these Tufteds, a young adult or old sub-adult, hang from its tail alone, without any support from hands or feet.

They gave a wide variety of notes, with so many intermediate types that I had great trouble sorting them out.

I heard a few B-like notes which sounded like single MGB's of the White-face, but these were relatively very very rare. I couldn't determine their social circumstances, causes, or functions.

The commonest note of these Tufteds was what I should like to call "Whining Notes" (WB). Soft notes, sometimes single, sometimes uttered in series of extremely variable length. Might be transcribed as "Wheoooo wheoooo wheoo wheoo wheoooo wheoooo" Rather plaintive & "conversational" in tone.

These were uttered by lots of animals in a wide variety of circumstances. Using during encounters between monkeys and probably also occasionally directed by a monkey toward human beings. I should imagine that this is probably a low-intensity hostile pattern. Perhaps the analogue and/or homologue of the Squ or, more probably, the

MGB's of other species. It is also hardly probable, however, that all or most of the WB's contained a definite sexual or friendly element, as the ♂ uttered WB's after the one copulation I observed, and the only 2 animals I was fairly certain were paired uttered WB's as they walked around together; but somehow I rather doubt this on the whole.

(I might add, incidentally, in connection with the possible analogous or homologous relations of this WB pattern, that I didn't hear any of these *Tufteds* utter any note which sounded like the *Squ* of the White-face).

The next most common sound uttered by these *Tufteds* was a soft trill, very similar or identical in sound with the ordinary Trill of the White-face (which I shall call S Trill from now on). Both the low-pitched, wooden, and high-pitched, shrill types. Usually with mouth wide open and some BT. This also occurred in a great variety of circumstances. Often given during apparently purely hostile disputes by a retreating animal. Also given quite commonly early in the afternoon (when visitors were just starting to come in to the zoo after lunch, and the monkeys were probably relatively hungry) by monkeys trying to get food from human visitors. In these latter cases, the S Trill's may have been produced when hostile motivation was combined with some "positive non-hostile" drive, but the S Trill's during apparently purely hostile disputes must have had a slightly different causation. It may be that the S Trill's of this species are produced whenever the attack drive is appreciably counteracted by some opposing tendency (and the opposing tendency may be different in differ-

ent cases). This may also be true of the S-Hill's of other species as well. I may have got a slightly wrong impression of the S-Hill's of some other species (i.e. that they were always produced by some positive non-hostile motivation in addition to hostility) simply because I haven't seen them in all the circumstances in which they can occur.

The third most common vocalization of these Tuffed was the Scream. Of the usual Cebus type, quite like that of many other species in sound, varying from quite hoarse to quite shrill. Given with mouth open & BT. Obviously connected with intense hostility, during vigorous disputes (see also description of copulation below). There seemed to be a general tendency for the most high-pitched shrill screams to be given by retreating animals.

The most interesting of the calls of these Tuffed was the rarest. Only occurred late in the afternoon, before the real feeding time, when the animals were generally most active. Long calls of many rapidly repeated short notes, which might be transcribed as "Oo oo oo oo oo oo,". I should like to call this RBB (see also today's notes on Lagothrix). Again given in a wide variety of circumstances. Extremely contagious!! Whenever one animal would start, many other animals would join in. It was my impression that identical RBB performances were given by both ♂'s and ♀'s, both adult and sub-adult. The whole thing seemed to be quite comparable to the Howling of Howler monkeys!

(Before I forget, I should add that, in spite of the fact

that the scream seems to be extremely hostile, it was uttered by monkeys rushing over to "greet" a man with whom they were obviously very familiar, probably a director of the zoo. This would suggest that the screams are either just high intensity general frustration reactions, or, more probably, that they can occur when approvable non-hostile motivation is activated, as long as hostility itself is high.)

The great event of the day was an apparently successful copulation! I first became aware of what was going on by seeing a large heavy animal (who turned out to be the ♀) repeatedly chasing a slightly smaller & much lighter animal (who turned out to be the ♂). These chases were just short rushes on the part of the ♀. The ♂ rushed away from her each time, giving a scream after a scream as he did so. Each time, at the end of a retreat, he would sit on his hind legs, body quite erect, with his folded hands pressed against his chest, or even moved over his chest (in a remarkably modest-looking way). This posture was very standardized & obviously highly ritualized. I shall call it "X". The ♂ always faced the ♀ during his X's. Sometimes he continued screams from the X; but occasionally it was silent (he would often begin an X with screams and then fall silent after a few seconds while he remained in X). I think that the ♂ must have started to approach or follow the ♀ again after each chase & retreat, and that there ^{approaches} were what provoked later chases & retreats, but I am not quite sure about this, (I had no idea what this all was going to lead to in the end, and so I didn't pay too much attention at first). In any case, I

looked up to see the ♂ sitting face to face with the ♀, with his hand on her cheek or chin in an apparent grooming movement or grooming int. mov. He then quickly moved behind her, mounted, & copulated. Apparently successful at least 7-10 pelvic thrusts. Both animals quite silent throughout. After the ♂ got off, the ♀ did nothing but the ♂ walked around and uttered a few WB Notes.

This X-ing before copulation was not a primarily sexual pattern. Later on I saw a sub-adult do X's repeatedly when chased by another monkey during obviously purely hostile disputing.

There was quite a lot of "play" wrestling & fighting (with biting or biting int. movs.) in the group today. Mostly involving sub-adults. Quite like that of the squirrel monkeys in Iquitos, except that it was all quite silent.

One of these "play" wrestling bouts was between 2 animals which I thought were a young ♂ and an elderly adult ♀. The young animal kept chasing the old one and trying to leap on its back. I thought that some of these leaps might be sexual attempts to mount, but the old animal always resisted vigorously and nothing ever came of the whole thing.

This species jumps up & down in anger like other monkeys. Several individuals did this when teased by visitors. Always quite silent — except one when it was accompanied by an S-Hill. (Further evidence that some S-Hill's are largely or completely hostile and possibly rather aggressive at times.???)

One animal, the ♂ who made the successful copulation att

Cebus apella, Dec. 26, 1958, VI.

©

empt, kept following me around late in the afternoon. He would cling, upright, on the bars of the cage, facing me, probably wanting food. Quite silent. While clinging in this way, he repeatedly (at appreciable but irregular intervals) threw his head back (approximately to the vertical) in a very rapid head-turning movement. I shall call this "T". I think that it was only an int. mov. of retreat.

Cebus apella, I.

June 5, 1959

Barro Colorado

I received a young ♂ of this species yesterday - by mutation! Still a baby, although not a very young one. Very sick. Cold? Apparently recovering from a broken arm. Not very active. Has to be force fed a little. I am giving it aureomycin every day. I shall call this monkey A.

Has just two principal groups of patterns.

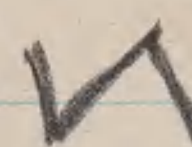
The first is WB, sounding quite like those of the Tuffed I watched in the Lima Zoo last year. Usually uttered as essentially single notes, but frequently repeated. A single typical WB might be transcribed by anything from "Wheoo" to "Whauh". I should estimate that almost 90% of the WB's A has uttered since he came have been of this typical type, but he has also uttered a couple of weaker sounds which are probably lower intensity versions of WB. The first is a weak, high-pitched, squeak. Uttered in the same sorts of poses as typical WB. Actually, these squeaks seem to intergrade completely with typical WB, and so they are presumably just slightly lower intensity than the lowest intensity typical WB. An even weaker pattern is a muffled very soft "tuh", (just like the tick of a soft clock).

also sometimes uttered in the same series as typical WB's. These seem to be WB's which are just too weak to be actually "emitted." It is my impression that they intergrade both with the typical and the squeaky WB's.

The WB's uttered by A are certainly hostile and/or general frustration reactions, and almost certainly the former rather than latter. When I first took A out of his travelling box yesterday and put him in his new cage he uttered lots of WB's (typical) almost all the time for an hour or two. This gradually declined. Now he usually only utters WB's when I move my hand toward him or pick him up.

Sometimes, when I pick A up his WB Notes are uttered very rapidly one right after the other and become longer than usual and somewhat more wailing. He usually tries to bite me vigorously at the same time. These longer notes, in fact, would appear to be quite typical scream patterns.

These facts would seem to suggest that the WB patterns of this species are strictly equivalent to the most common moderately high intensity B patterns of other species, e.g. the MGB of capucinus and the B of the Howler. It is perhaps surprising, therefore, that it sounds so unlike the B's of other species.

The other principal pattern performed by A is more elaborate. In its typical form it consists of a note, plus several movements. The movements are an Lsh, apparently just like the Lsh of the White face (see notes of Mar. 31, on capucinus), and a PL of the usual type. The note is more peculiar. Sounds somewhat like an abbreviated MGB of the White face (perhaps just slightly sneeze-like), frequently with a slight  quality (sometimes, perhaps, sounding like an abbreviated "wooden" call of such species as the Woolly Howler).

This pattern is not usually associated with WB's. Perhaps less h.

Cebus apella, June 5, 1957, III.

(8)

ostile? Apparently occurring in the same circumstances as the Lsh & S-Hll (and occasionally MGB) of the White-face. A usually gives this performance when I stare at him fixedly or intensely from a few feet away. If he doesn't do it when I stare at him, I can sometimes induce it by shaking my head myself. All this would suggest that the pattern is some sort of "greeting", with or without hostility.

If the pattern as a whole is strictly homologous with the similar pattern of the White-face, this would suggest that the note (which I shall call the "Lsh N" for the time being) is strictly homologous with the S-Hll. Interesting if true, as it would mean that the equivalents of the B and S-Hll patterns of this species differ from each other in tonal quality in just exactly the opposite way from the B and S-Hll's of other species. The sound of the Lsh N would suggest that it is more strictly homologous with the notes intermediate between the typical B Notes and typical S-Hll's sometimes uttered by other species.

The Lsh movement is sometimes performed without any sound, and I think that the Lsh N can sometimes be uttered without any movement except PL. What does this mean?

Cebus apella, I.

August 11, 1961

Barro Colorado

Some people here have a Tufted Capuchin as a pet. Not full grown. At least 2 years old, but quite small (perhaps somewhat dwarfed because of poor care in infancy). Very tame. ♂?

I went to visit it this afternoon.

When I first arrived, the animal greeted me (and its owner) with a burst of short notes which were either J or WB. But it never ut

Cebus apella, Aug. 11, 1961, II.

(9)

tered such notes again, during the half hour I remained watching it.

When it was let out of its cage, it immediately proceeded to investigate me (and David Bleit, who was along). SNF'd at both of us. Also tried to wrestle with us. "Play". This play wrestling was accompanied by a few S-Hll's. Also some silent MO & BT, and BT alone.

When the animal was not wrestling with us, it ran gaily round and round the room, stopping to play with various objects from time to time. During this behavior, it uttered a few single MGB's.

Cebus apella, I.

August 23, 1961

Barro Colorado

I got a half grown Tuffed Capuchin from Peru (Iquitos) last week. Healthy but shy. Call it "Jore". Has been kept by itself in an outside cage. This morning I am going to put the tame White face, Ork, in with it.

Ork put in 7:45.

Jore' does not react very vigorously. Continues pacing around cage, apparently ignoring Ork.

Utters quite a lot of single B's while pacing. Sort of "Eeyah" notes. Second syllable very wooden and hollow-sounding. These notes appear to be either a distinctive type of WB and/or low intensity MGB's. Probably the former.

Jore' also does quite a lot of scratching (using both hands and feet) during this pacing. Also utters a few sneezes. I don't know if any of these patterns are significant or not.

Jose continues behaving as before, until Boca comes with food.
8:20 a.m. Food put right beside Ork. Jose comes to get food repeatedly, seems to ignore Ork completely.

Then Jose utters a few typical MCB's (quite unlike earlier B-type notes) when coming to get food.

Then goes back to pairing, more or less as before, but silently 8:30. Then starts uttering "Eeyuh" "WB"-type notes during pairing.

The fact that Jose uttered MCB's only when coming down to get food near Ork might suggest that its MCB's contain a relatively stronger "friendly" component than its "Eeyuh" notes.

Behavior continuing as before, 8:55.

Some of Jose's "Eeyuh" notes have just a trace of a trilling quality. Almost "Eeyuh-uh".

Jose starts coming down for food again 9:12. Ignores Ork. But again utters MCB's when coming down for food. Then returns to pairing. Again utters "Eeyuh"s, and not MCB's, while pairing.

Jose is uttering many fewer "Eeyuh" notes now, 9:30. Apparent by getting used to me and/or Ork (Ork is asleep now).

Also utters a brief Squ notes, once, while pairing.

Jose just looks at Spider Monkey pairing by. No other reaction.

Continues pairing, uttering occasional "Eeyuh" notes, when Ork starts moving around cage, 9:50 a.m.

Leaving 10:05.

Back 4:50. Both animals more or less as I left them. (See today's notes on capucinus) Jose still pairing branches. Silent when I first approach, when Ork displays madly. Then Jose utters a few single "Eeyuh"s after about 5 minutes, after Ork has begun to come down (and Jose is pres

usually becoming used to me).

Jore reacts very markedly to a Bufo marinus which approaches cage at 5:55. Extreme MO (with perhaps a slight trace of BT). Silent. Followed by 2 brief MGB's (MO probably stops when MGB's are uttered).

Then I go into the cage and approach Jore, to see what he will do. Runs around. Alternating periods of silent BT (very extreme - "mouth full of teeth" - no trace of MO) with single soft MGB's. BT relaxes or disappears when MGB's uttered.

This is good evidence that MGB is either less aggressive or higher intensity than "Eeyuh". Probably the latter. The "Eeyuh"s uttered by Jore earlier were not accompanied by aggressive movements. And Jore alternated advances toward me and retreats away from me as it uttered the MGB's. (BT is also almost certainly aggressive.)

This interpretation was confirmed by another incident a few moments later. The Wood-rails in a nearby cage suddenly began to call very loudly. Jore reacted by uttering a whole burst of "Eeyuh"s, one right after the other, interspersed with occasional soft MGB's. Obviously a relatively high intensity performance. Certainly higher intensity than the single "Eeyuh"s he uttered earlier when pacing around his cage undisturbed.

I am beginning to think that his "Eeyuh"s may be nothing more than his "usual" WB's.

When I went down to Jore, he also performed some other movements, which I have seen before, but not commented on. Pushing his chest and throat along a branch. Using his hind legs to push. Whole chest resting on a branch. Arms dangling limply on either side of the branch. In this way, he sometimes pushes himself 3 or 4 feet along a branch. Looks very much as if he were trying to get rid of an itch on his chest. But he isn't

Cebus apella, Aug. 23, 1961, IV.

(12)

and did a surprising number of these movements while I was close to him. (He also does similar posturing in other circumstances, but less frequently.) I do not remember seeing White faces perform similar patterns. So perhaps this pattern of Jose's is a "learned signal".

Leaving 6:10 p.m.

Thinking things over, I suppose that the "Eeyuh" notes uttered by Jose today may have been the homologues of the Eyk patterns of capucinus. But it does seem unlikely. I have never heard Eyks uttered by capucinus of comparable age.

Cebus apella, I.

January 20, 1962
Barro Colorado

The tame young Tuffed which the Storer's have had for a pet for a couple of years (see notes of August 11, 1961) has been sent out here for a couple of weeks. Arrived a few days ago, when I was away. Has been kept by itself in a small cage in the animal house.

This animal is male. I shall call it A.

When I approach his cage, he runs back and forth rather nervously. Utters a few soft single MGB's. Also does occasional brief silent BT. Some scratching (most frequently scratching side with hand).

He utters a few MGB's, and also silent MO+BT, when he sees a boy walking outside the house. Also a tendency to sway from side to side at the same time. Possibly ritualized SS.

When I move suddenly, he utters an AB.

When I stick my hand in his cage, he utters a few single,

very low pitched, grunt-like, B. Notes. Obviously hostile. A little difficult to equate with other B patterns. Sounded almost like low pitched abbreviated versions of the BB of Whitefaces. Not uttered in rapid series. Three or four notes uttered at irregular intervals.

A does MO with only slight BT when Howlers suddenly become noisy. Presumably A is slightly alarmed by them.

Some of his weakest and briefest MGB's are very high-pitched and plaintive. Almost "WB"s. But not at all like the "Eeyuk"s of Jore. Much softer, less abrupt.

When his cage is picked up, he runs around, utters a few S-Hill's and several more of the deep grunt-like B's (I shall call these "GB"). Then more S-Hill's as Boca carries cage down hill. Then starts to utter a series of very urgent sounding MGB's. Very rapid. Then a few L-Hill's. Mangled with a few "Eeyuk" notes. "Eeyuk"s obviously intermediate between Hill's and MGB's. Utters more GB's and Hill's (more or less intermediate) when cage bunks against branch.

Then utters Squeams (rather hoarse) when he thinks Boca is going to pick him up by hand.

Then introduced into Jore's cage. Both animals start to utter lots of MGB's when they see one another. Jore also utters "Eeyuk"s. A starts to utter "Eeyuk"s as well as MGB's as soon as he gets into Jore's cage. Both animals run around cage uttering random jumble MGB's and "Eeyuk"s for some time afterward 10:05 a.m.

After Boca leaves, A looks after him. With characteristic expression on. Eyebrows raised, but eyes partly closed. Silent. Very reminiscent of one of the "greeting" or appeasement expressions of spiders. But without PL. (I think that I have seen other Tuffed's assume same expression)

A and Jose' don't seem to be reacting to one another at all now, 10:10; just reacting to me.

A does one GB with Loli, as a reaction either to me or the sudden appearance of a Curanow.

Then A does the silent eye brows raised - eyes partly closed pattern to me 10:17.

Both animals much quieter now. Just uttering occasional MGB's. The MGB's of the 2 animals seem to be nearly or absolutely identical in sound.

A occasionally makes little sneezing noises. I don't think they are significant.

A is now spending all his time watching me, while Jose' runs about nervously as usual. The 2 animals haven't gone near one another yet 10:22.

Incidentally, I forgot to mention that some of the GB's uttered by A while his cage was being carried were obviously "transitional" to BB. With a definite "Oooh" quality.

A is just slightly smaller than Jose'. I think Jose' is probably ♀. Neither animal has well developed tufts.

Jose' carefully avoids going to the corner of the cage in which A is sitting, but she never appears to look at him.

Still no change in the behavior of the animals 10:35. A still does a lot of eye brows raised - eyes partly closed to me. Also uttering occasional MGB's. Some of these MGB's are uttered when his eyebrows are raised and his eyes are partly closed, but this is not usual. The expression is usually silent. It is often, I think, accompanied by just a slight trace of chin-lifting.

I move about 40ft away from the cage, 10:40, to see if Jore' and A will get acquainted. No. A does start to run around the cage a bit (he had been sitting watching me before this) but he doesn't approach Jore'. Then wild White faces come down to the cage, and I had to go back. A goes back to sitting and watching me, eyebrows raised and eyes partly closed most of the time.

I should explain that this eyebrows raised - eyes partly closed pattern is never long-sustained. Always maintained very briefly. But repeated very frequently.

Leaving now 10:52. Will come back in the afternoon.

Back 4:50. Stay far away from cage for a few minutes, in order to see what the animals are doing. Nothing much. Jore' pacing up and down cage. A sitting in corner. Both silent.

Then when I come closer, both animals start to utter MGB's. When I sit down close to cage, Jore' continues to pace, but starts to utter "Eeyuk"s. A continues to sit, but does lots of eyebrow raising - eyes partly closed patterns, facing me. No chin-lifting (perhaps I was missing the chin-lifting this morning). But most of the eyebrow raising - eyes partly closed patterns when I first arrived were accompanied by definite Lsh's and soft GB's. One note per Lsh. After I had been sitting a while, A continued eyebrow raising - eyes partly closed patterns, but stopped the Lsh & GB patterns. Presumably an indication of declining intensity.

I think I shall call this eyebrows raised - eyes partly closed pattern "EY" for the time being.

It is possible that the eyes are really kept wide open during many EY's. The effect of partial closing may be due to the fact that the eyebrow

us are raised so very high.

Perhaps the "yuk" parts of Jose's "Eeyuk"s are not indications of BB — at least in all cases. No "oo" quality. Just resemble "undifferentiated" B's. Some of them might even be indications of al B's.

Animals reverted to former uninteresting behavior now 5:15.

When I look at A intently he starts to perform the EY + Lsh + GB patterns again. EY's disappear between Lsh + GB patterns.

A was very active in his small cage upstairs. But he has sat still almost all the time since he was put in Jose's cage. I think this must be an indication of alarm. Less specialized than Add of other species. No trace of looking downward.

At 5:20, I went into the cage to try and give A some food. He did some EY + Lsh with "Eeyuk"s as I approached. Then subsided into EY + Lsh + BG, when I stopped approaching him. Then jumped away when I came close to him. As he jumped away he uttered a wonderful series: BG - BB - Scream. Several notes of each kind. Intergrading. A perfect progression in fact.

I think "Eeyuk"s must be more strongly hostile than MGB's and the Scream obviously contains a very strong escape component.

Leaving 5:30 p.m.

Cebus apella I.

July 29, 1963
Barro Colorado

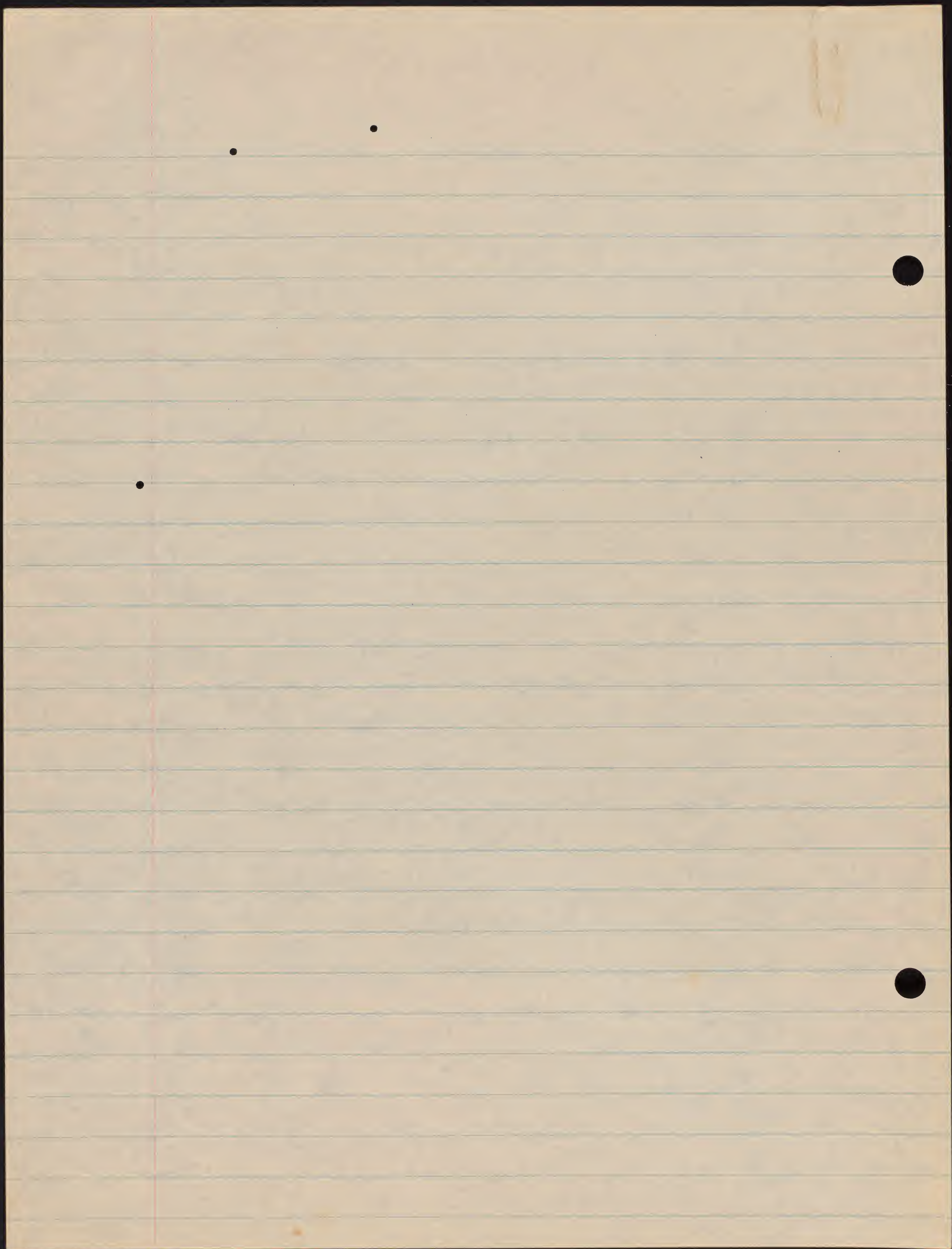
Jane 'escaped' long ago and has not been seen since.

For over a year, A has been kept with the Ork Whiteface
just in cage with Squirrel Monkey. Then both Ork and A kept
alone in cage next to three other Whitefaces.

Ork is the hand raised Whiteface who always clutches himself
(in a sort of "twist") - like posture, hands tucked in in front, tail
curled around body. Usually while crouching. Sometimes with trace of
bouncing up and down. Usually done as a reaction to approach by human
being. Mixed alarm & "friendly" reaction? Or purely friendly?

This afternoon, we opened the cage door between Ork and A
and the three other Whitefaces. Allowing them to mingle. More or less
friendly toward one another. Except for one adult (young adult) ♂
Whiteface. This individual repeatedly threatened, and made little (in-
hibited) attack rushes toward A. Three times, Ork reacted by brief
incomplete, "clutching" patterns very reminiscent of Ork. Usually while
sitting up. (Probably with slight intention movement of crouch).
Hands tucked in. Tail curled around body.

This is the first time that I have seen such behavior by A.
Presumably inter-specific learning.



CEBUS APELLA

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Use of tail Young adult hanging by tail alone; 1.

"Juk" Notes. Very soft. Uttered by sick juvenile. Apparently
closely related to Squ - WB; but even lower intensity. 6

Squ. By juvenile; 6. Not uttered by Lemia animals; 2

WB Most common B pattern. Whining. Usually in series. Notes
of variable length: "Wheeeeooh wheeo" etc. Description; 1, 6. By
juvenile; 6. By ♂, after successful copulation; 2. By mated animals an
sociating with one another; 2. Intergrading with Screams; 7.

General discussion; 7. Low intensity hostility?; 1. Produced
by same motivation, and subserving same function(s), as MGB capucinus
?; 1. Partly friendly and/or sexual?; 2.

MGB Relatively very rare. Uttered only very occasionally by Lemia
animals; 1.

Lsh and Lsh Notes. By sick juvenile. Note & movement usually

but not always, occurring together. Note itself sounds rather like MG-B capucinus (and also, sometimes, like an abbreviated and very wooden Hll). With PL. By juvenile, directed toward me. "greeting"
? 7.

Hll. Variable in pitch and loudness. Certainly homologous with S-Hll capucinus. Probably also includes homologues L-Hll capucinus.

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CEBUS APELLA

INDEX - June 5, 1959

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Jud. Description, usually silent, sometimes with soft Hll; 5.

X Posture. Hands crossed on chest. By ♂ when chased by ♀, before successful copulation. Often accompanied by Sreams. 4.
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"Play" fighting and wrestling. Description; 5.

Copulation Description apparently successful attempt; 4.
♀ chasing ♂ beforehand. ♂ screaming and assuming X Postures.
♂ probably grooming ♀ immediately before mounting.
Cop. itself quite silent.
♂ utters WB after cop. ♀ silent.

